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A "what if" analysis for sound financial management decisions in Romanian European Social Fund grants evaluation

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Abstract

European Commission trusted for implementation the European Social Fund (ESF) to Member States through a commonly agreed decentralized management system, including compliance to the "sound financial management" principle within the Members' State designated Authorities obligations. While implementing ESF, Romania should comply too with this principle all projects cycle life: national ESF programming, launching calls for grant proposals, evaluating applications and contracting, monitoring and disbursing sums. Even if performance's basis is put in the programming phase, grant assessment phase stays as the most important in fixing each grant's future performance and the program's performance framework as well. Our study tends to enhance the importance of assessment process for sound financial management implementation in a "what if" analysis based on potential financial corrections applied due to a potential deviation of proposed costs from fixed standard cost.
Conclusions lead us to a number of scenarios that may be practically used for assisting management's decision and reporting towards a sound ESF implementation in Romania.

Keywords: Econometric tools, Fixed costs, Variable costs, Sound financial management;

1. Introduction

Relevant information comprising management best practices applicable in different fields, including grants implementation, may be found in different studies (Crisan, Ilies & Salanta, 2010; Plesea & Visan, 2010, Dragos, 2007). A sound financial management of ESF grants is crucial for the program's effectiveness (Jaliu & Radulescu, 2013). The European Commission (EC) has defined the sound financial management (EC Regulation 966-2012, art. 30) reported to the principles of economy, efficiency and effectiveness. According to the EC latest practices, sound financial management tends to become expenditure eligibility criteria, being an objective indicator of returned value for EU money invested in various fields. In case of ESF implementation in Romania under decentralized management, we may report resources to outcomes, determining efficiency (ISSAI 3000).

Our present analysis follows the impact at operational program's level of possible financial corrections applied within the grants assessment phase due to some proposed costs exceeding normal, acceptable, reasonable cost levels, as we consider that they were implicitly understood within the ESF financed Operational Program. Our tested and confirmed hypothesis is that in case of financial corrections applied to some of the grant applications, a stronger

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dependence could be found between allocated resources and outcome indicators in terms of program efficiency. In fact, our present analysis is a simple one, offering answers to simple questions. What should have happened with operational program efficiency if evaluation committees had been made financial corrections for exceeding costs? Should have been there a stronger bound between budgets and indicators, or some other regression model following efficiency? Could these models suggest a better performance oriented approach to program management?

Unfortunately, a clear performance criteria for reporting efficiency component of performance to, is not explicitly defined. Based on its Activity Based Management-ABM approach (ECA Performance Audit Manual), the EC has approved program's budget for a number of outcome and result indicators, without defining a clear relationship between budgets and indicators. This is why an efficiency evaluation may hardly be accomplished. Even with the use of accounting management tools (Dogar, 2013), if financed activities are delivering more than one result, because of multi co-linearity problems (Dogar & Mare, 2013) the unit cost may be hard to be determined. We may appropriate for use of this study the standard cost as the average unit cost of the biggest target indicator, considering also for the conclusions the correlations among indicators and activities to be developed for attaining it within the approved ABM budget. For our study, based on the data we collected from 101 projects financed within the Priority Axis 5, Key Area of Intervention (KAI) 5.1. the indicator we will report the budget to in order to determine an appropriation of unit standard cost is number of professionally oriented long term unemployed (65,000 people). Reporting this to total KAI allocation, unit standard cost we are using in our analysis is 3050 euro/oriented person.

After imposing the limit of 3050 euro/ participant in the professional orientation activities, we have re-estimated the budgets of the sample projects exceeding the standard cost to the standard. The relationship between the budgets and the number of persons involved this type of activities was studied. This paper presents a comparison between the real situation (scenario without cost limitation) and the "what if" situation (scenario with unitary cost limitation). Results clearly show that imposing a cost limit increases the influence of the number of participants upon the value of the budget, together with increased influence of variable costs and decrease of fixed costs for small target group oriented projects. However, the relationship between the two variables is not linear. Consequently, we have searched for the best type of model to describe it. The analysis emphasizes the best fit for the power and quadratic models.

2. Methodology and data

For the purpose of our analysis we have employed classical econometric tools based on the Ordinary Least Squares estimation method (Dragos, 2008). After descriptively describing the variables, we have constructed the linear regression model in order to assess the relationship between the budget of the project and the indicator stating the number of persons that participated to the professional orientation activities. The budget was used in its initial form (the real value accepted for the programme) and the theoretical one. We constructed the latter by imposing a maximum level of 3050 euro/participant to be spent as standard cost. All the values that exceeded this limit were replaced by it and the new budget (called the scenario budget) and the new unitary costs were computed. Results were then compared and conclusions drawn. The difference between the 3050-euro/participant limits and the real unitary cost was also computed. Scatter plots that graphically describe the relationship were constructed and, based on them, four regression models were, in the end, constructed and compared in order to find whether the linear one is the best to describe the dependence or not. The four models are: linear, logarithmic, quadratic and power. The regression analyses were run twice for every case, once on the whole sample and once on the adjusted sample (after eliminating outliers). The sample consists of 101 projects financially sustained through European Cohesion Funds. The adjusted sample was of 97 projects. The software used are STATA 9.1 and SPSS 17.0.

3. Results

To evaluate the efficiency of the ESF financed projects, we have used the deductive limitation of the unitary cost at 3050 euro, considered as standard cost and re-estimated the budgets accordingly. The average real budget was of 455152.52 euro, while with limitation the average reduces at 426704.76 euro. For the whole sample under analysis, imposing a maximum limit of 3050 euro spent per participant would have saved a total of 2873223.73 euro. The reduction also is to be seen in the average of the unitary cost, from 2334.53 to 1969.11. The spending with professional orientation of one individual involved in the program would have cost, on average, with 715.47 euro

less than it did. Descriptive statistics (table 1) were computed to have a first glance at the difference between what really happened and what would have been the budget if constraints had been imposed in the sense of limiting the unitary cost at maximum 3050-euro/ participants. All in all, just a glance at the descriptive statistics table (table 1) reveals a great sum of money that could have not been used for other purposes if restrictions had been imposed by the ESF management authorities (increased economy of operational program in implementation).

Table 1. Descriptive statistics for the analyzed variables.

Euro		Real Budget	Real unitary cost	Unitary cost - scenario	Difference in unitary cost between reality and scenario	Budget - scenario	Number of persons professionally oriented
Mean		455152.52	2334.53	1969.11	715.47	426704.76	290.03
Sum		45970404.60	-	-	72261.97	43097180.87	-
Median		482623.37	1997.87	1997.87	1052.13	468834.20	220
Mode		477344.45[a]	1309.39[a]	3050.00	1558.65[a]	305000.00	200
Minimum		80719.28	318.52	318.52	-6949.34	80719.27	30
Maximum		547029.59	9999.34	3050.00	2731.48	547029.60	1400
Percentiles	25	431577.34	1260.08	1260.08	343.23	386092.25	150.00
	50	482623.37	1997.87	1997.87	1052.13	468834.20	220.00
	75	501927.60	2706.77	2706.77	1789.92	499607.05	381.00

a. Multiple modes exist. The smallest value is shown

When analyzing the median and the percentile values, one can observe that no differences exist between the two types of unitary costs. But the maximum real unitary cost is more than triple the theoretical one.

For the purpose of this analysis, we have constructed and compared the equations that model the relationship between the budget and the number of persons that took part in the professional orientation activities in the two situations – the real one and the limiting scenario. As linear regression is the simplest to be interpreted and applied, we have run first this type of models and assessed the validity.

In our previous study (Dogar & Mare, 2013) we have shown the relationship between the budget of the projects and some of the major indicators. Results show that only 7.4% of the budget's variance is due to the number of professionally oriented persons. This implies that there are a lot of additional costs included in the budgets of the projects that are related more to fixed costs than to variable. Furthermore, any additional individual participating in the professional orientation activities would imply an average increase in the budget by 188.08 euro.

By contrast, the scenario results are much better. The adjusted R-squared value goes up to 14.14%, almost double than in reality. There are four projects that have extremely high budgets. When eliminating these outliers, the significance of the results increases. Table 2 presents the results of the analysis for the situations compared.

Table 2. Results of the linear regression analysis.

	Real budget	Scenario budget (with outliers)	Scenario budget (without outliers)
Adjusted R-squared	0.074	0.141	0.323
Probability (F test)	0.004	0.0001	0.0000
Unstandardized coefficient	188.08	179.43	469.39
Probability	0.004	0.000	0.000
Constant	407216.37	374665.7	306564.3
Probability	0.000	0.000	0.000
Standardized coefficient	0.290	0.387	0.575

We may observe that the quality of the model increases from left to right. The value of the budget is influenced in a proportion of 32% by the number of persons involved in the professional orientation activities in the case of limiting the unitary cost at 3050-euro/ participants and eliminating the outliers. Additionally, the fixed unitary cost decreases. Yet, the plots constructed have evidenced that the relationship between the number of persons that took part in the professional orientation activities and the budget of each project analyzed is not linear (see for exemplification figure 1). The results were the same when considering the real budget or the theoretical one. As the

purpose of our research was to see what would have happened if restrictions had been imposed by the management authorities, we present further on the results of the analyses having as dependent variable the budget associated with the scenario. Consequently, we have tested several options to obtain the best-fitted model for the relationship between the two variables, in the case of the assumed scenario. The observed data and the regression models tested are presented in figure 2. We have compared the linear model with the logarithmic, the quadratic and the power model. Results have been slightly different for the two variants – with or without outliers. When the whole sample was taken into consideration, the best-fitted model proved to be the power model, with an R-squared of 0.468 and an adjusted value of 0.463. However, the difference between the power and the logarithmic type is almost inexistent. In the second case, the two values were 0.467 and 0.462, so by only 0.001 lower than in the first one (see table 3). When eliminating the outliers, the quadratic model proves to best describe the relationship. The values of the R-squared increase significantly. Regardless of the model, the values for the significance levels show that the results can be accepted with a probability of 99% (all are 0.000).

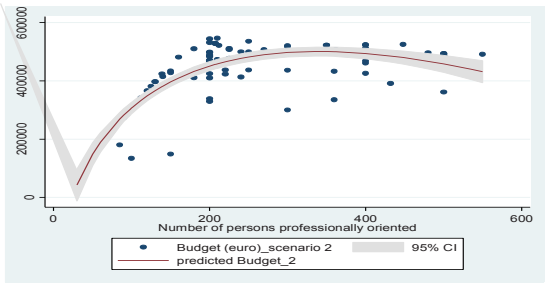

Figure 1. Scatter plot – Scenario budget versus number of persons professionally oriented

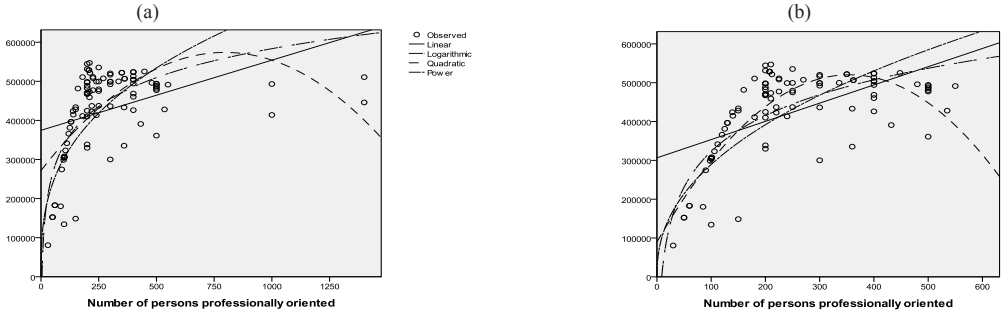

Figure 2. Budget–scenario versus number of persons professionally oriented – possible regression models: (a) – with outliers, (b) – without outliers

Observing scatter plot we may consider that in relating budgets to indicators there are two areas of interests: one, in which costs are rapidly increasing with indicators meaning a direct dependency of costs to indicators through a sound component of variable costs, and the other, relatively rigid, where costs are first increasing and then slightly decreasing with indicators. First area could be interesting for the donor's representative because of its relatively reduced fixed costs, complemented with substantial variable costs and the second for the relatively reduced unit costs. Management decision about which area proposals should be encouraged, involves also program's management costs. Taking into consideration the fixed target of indicators, management of more projects proposing each a relatively small number of indicators should be inefficient reported to management of a small number of projects proposing a significant number of indicators. The Romanian designated authority; responsible with the program's sound financial management should include within the tenders' documents the appropriate eligibility

criteria for its desired option. Such provisions could mean the introduction of the awaited reasonability criteria, so needed for the sound financial implementation of ESF in Romania

Table 3. Model evaluation Budget – scenario versus number of persons professionally oriented (with and without outliers)

	Linear		**Logarithmic**		**Quadratic**		**Power**	
	With	Without	With	Without	With	Without	With	Without
R-squared	0.141	0.33	0.467	0.556	0.387	**0.653**	**0.468**	0.555
Adjusted R-squared	0.15	0.323	0.462	0.551	0.374	**0.645**	**0.463**	0.55
Coefficient	179.43	469.39	-	-	758.42	2428.77	-	-
Ln(Coefficient)	-	-	106788.3	133029.55	-	-	0.351	0.437
Coefficient **2	-	-	-	-	-0.476	-3.423	-	-
Constant	374665.68	306564.35	-154202.55	-289591.39	271735.13	89595.55	60241.02	38661.56

4. Conclusions

As we already stated, the purpose of the above "what if" analysis was only to determine if stronger relationships could be found between output indicators and budgets in a theoretical situation of standard costs related financial corrections. Lack of some objective performance indicators for sound financial management of Romanian ESF financed program (such as commonly agreed standard costs or other reasonability criteria), keeps our analysis in theory. We outline that the standard cost of 3050 euro/person, extracted from official figures, as described above, is our hypothesis and not an objective, commonly agreed performance audit or reasonability criteria. This standard cost may hide some other services or some other costs (such as training), not directly related to professional orientation services. Our tested and confirmed hypothesis is that in case of financial corrections applied to some of the grant applications budgets, as a result of applying the principle of costs reasonability, a stronger dependence could be found between allocated resources and outcome indicators in terms of operational program efficiency. The whole cut, as a result of imposing financial corrections to some of the projects budgets exceeding reasonability criteria, could mean a contribution to the program economy. Nevertheless we may not forget that figures should not be used absolutely to determine management decisions in financial programs regarding employability investments in long term unemployed.

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